REMARKS/DISCUSSION OF ISSUES

Claims 1-15 and 20-22 are pending in the application. Claims 1-15 and 20-22 are rejected. Claims 6-15 are objected to. Claims 1-15 and 20-22 are currently amended.

Claims 6-15

Claims 6-15 are objected to because a multiple dependent claim cannot depend from another multiple dependent claim.

The claims are currently amended to delete all multiple dependencies. Accordingly, the objection has been overcome and should be withdrawn, and claims 6-15 should now be considered on their merits.

Claims 1-15 and 20-22

Claims 1-15 and 20-22 are rejected under 25 USC 112, second paragraph, for various reasons.

Claim 1 has been rejected for the use of the terms 'such as' and 'specifically'. Claim 1 is currently amended to delete these terms, and to now call for a metal halide lamp having an aspect ratio greater than 3.

Claim 1 has also been rejected in the term 'aspect ratio' is indefinite. However, the term has been defined at page 3, lines 27-30 of the specification as the ratio Li/Di, where Li and Di are the internal length and diameter, respectively, of the discharge chamber. Accordingly, the term 'aspect ratio' is not indefinite.

Claim 1 has been rejected for the use of the phrase 'with aspect ratio greater than 3 or even 4'. Claim 1 is currently amended to delete the portion of the phrase 'or even 4'.

Claim 5 has been rejected for use of the phrase 'order of'. Claim 5 is currently amended to change the phrase 'in the order' to 'within the range'.

In view of the above arguments and amendments, the rejection under 35 USC 112, second paragraph, has been overcome and should be withdrawn.

Claims 1 and 2

Claims 1 and 2 are rejected under 35 USC 102(b) as being anticipated by Geijtenbeek (US patent 6,147,453).

Claim 1 calls for the lamp to be designed such that, when the lamp is operative in a vertical orientation, the location of the salt pool is close to the top of the discharge chamber.

Geijtenbeek discloses a metal halide lamp having a ratio EA/Di greater than 5, where EA is the interelectrode spacing and Di is the internal diameter of the discharge space, and containing an alkali halide in the discharge space, characterized in that the alkali halide comprises LiI.

Although Geijtenbeek discloses that the halide salts are present in the discharge chamber in excess (col. 3, line 10), he does not teach or suggest anything regarding the location of the salt pool, regardless of the operating orientation of the lamp.

Claim 2 calls for the coldest spot to be close to the top of the discharge chamber.

Geijtenbeek mentions nothing regarding the cold spot, yet the Examiner has argued that the coldest spot would inherently be at the top of the discharge chamber because it is farthest from the electrode because it conducts and absorbs the least heat generated from radiation.

The Examiner has provided no supporting evidence for this assertion. Moreover, while the top of the chamber is far from one electrode, it is near to the other electrode, and the heat-generating discharge is generated between the two electrodes.

Thus, the premise of the Examiner's statement that the cold spot is far from 'the electrode' is invalid.

Accordingly, the rejection is in error and should be withdrawn.

Claims 1 and 2

Claims 1 and 2 are rejected under 35 USC 102(b) as being anticipated by Graham (US patent 5,083,059).

Graham discloses a metal halide lamp characterized by means for heat management within the arc chamber. Specifically, Graham discloses an electrode structure having a relatively small diameter lead wire 34 and a larger diameter post portion 36 which has a greater surface area and thus greater heat conducting properties, so that the salt pool 98 resulting from excess salts in the discharge chamber tends to collect adjacent to the lead wire 34 (Fig. 3), rather than condensing and crystallizing further out on the walls of the envelope, and causing objectionable flecks to appear in objects illuminated by the lamp (col. 1, lines 33-36).

Graham does not teach or suggest anything regarding a heat management structure which would result in the salt pool and/or the cold spot being near the top of the discharge chamber during lamp operation in a vertical orientation.

Graham does show the arc tube in a vertical orientation in the figures. However, he does not show the salt pool 98 near the top of the discharge chamber, but rather shows the salt pool near the bottom of the chamber (Fig. 3).

The Examiner has argued that the cold spot would inherently be at the top of the chamber. However, this argument is invalid for the reasons already presented above with respect to the location of the salt pool.

Accordingly, the rejection is in error and should be withdrawn.

Claims 1 and 3

Claims 1 and 3 are rejected under 35 USC 102(e) as being anticipated by Aldermam (US patent 6,844,676).

Alderman discloses an HID lamp with a frame wire structure which cancels the magnetic field in the vicinity of the arc tube, thus preventing arc bending and consequent heating of the arc tube surface near the bent arc, regardless of the orientation of the lamp in the fixture and regardless of the relative position of the frame wire to the arc tube. (See, e.g., col. 4, lines 3-8).

Alderman teaches nothing regarding heat management to influence the location of the cold spot. Alderman's frame wire structure is designed to neutralize the magnetic forces which would otherwise result in bending of the arc and heating of the side wall of the arc tube. Thus, Alderman is concerned with reducing asymmetric heating of the sidewall of the arc tube, not with heat management to influence the location of the cold spot, and specifically not with heat management to reduce heating of the ceiling of the arc tube by the arc.

Accordingly, the rejection is in error and should be withdrawn.

Claims 4, 5, 20 and 21

Claims 4, 5, 20 and 21 are rejected under 35 USC 103(a) as being unpatentable over Geijtenbeek in view of Kawashima (US patent 6,294,870).

Kawashima discloses a high pressure discharge lamp, in which the lower discharge electrode (cathode 22) is mounted closer to the lower end of the discharge chamber than the upper

discharge electrode (anode 23) is mounted to the upper end of the discharge chamber.

However, claim 4 is patentable by virtue of its dependency on claim 3, which is patentable for the reasons already advanced above.

Regarding claim 5, neither Geijtenbeek nor Kawashima teach or suggest the lower electrode has a point-to-bottom distance within the range of 0-5 mm.

Regarding claim 20, neither Geijtenbeek nor Kawashima teach or suggest additional heat generating means close to one end of the discharge chamber.

Regarding claim 21, neither Geijtenbeek nor Kawashima teach or suggest additional heat generating means in the form of a radiation coil.

Accordingly, the rejection of claims 4, 5, 20 and 21 over Geijtenbeek in view of Kawashima is in error, and should be withdrawn.

Claim 22

Claim 22 is rejected under 35 USC 103(a) as being unpatentable over Geijtenbeek in view of Liebe (US patent 4,621,216).

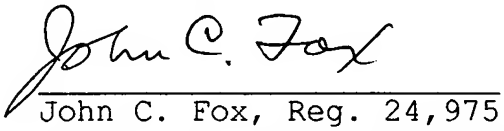
Liebe discloses a high pressure discharge lamp with a screening body (43) extending with a constant cross-section from a tubular lead-through member (40) to the end of an emitter-containing element (42) facing the discharge path. Thus, an improved temperature control is obtained within the discharge envelope (3) during operation of the lamp.

Liebe discloses in Fig. 1 power supply leads 8 and 9, but does not teach or suggest that these or any other power supply means are connected to emitter-containing element (42).

Accordingly, the rejection of claim 22 over Geijtenbeek in view of Kawashima is in error, and should be withdrawn.

Accordingly, Applicant respectfully requests that the Examiner withdraw the objections and rejections of record, allow all the pending claims, and find the application to be otherwise in condition for allowance.

Respectfully submitted,



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